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FOREST PEST MANAGEMENT

BIOLOGICAL EVALUATION R2-83-5
(Update Report)

Mountain Pine Beetle
Infestation in Lodgepole Pine

Roaring Fork and North Fork
Drainages, Little Snake River

Medicine Bow National Forest
1983.

United States
Department of
Agriculture

Forest Service

Forest Pest Management
Denver, Colorado

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INTRODUCTION

In July 1981, an aerial reconnaisance flight of the Medicine Bow National Forest was conducted by Forest Pest Management staff members. The survey revealed a scattered mountain pine beetle (*Dendroctonus ponderasae*) infestation in Lodgepole pine (*Pinus contorta*) along the Roaring Fork and North Fork drainages of the Little Snake River.

On September 21-25, 1981, an insect and disease evaluation (Appendix II) was conducted. The purpose of the evaluation was to determine stand susceptibility to mountain pine beetle attack; the degree of Lodgepole Pine Dwarf Mistletoe (*Arcenthobium americanum*); and Comandra rust (*Cronartium comandrae*).

During the week of September 19-24, 1983, the Roaring Fork area was revisited for a follow-up evaluation. The purpose of this evaluation was to determine the change in infestation level from 1981 to 1983.

METHOD

Cruise lines were run in each of the seven stands in the survey area (Fig.--1). Cruise lines were 20 chains long and 5 chains apart in larger stands (1, 2, 3, 4, 6, and 7), 10 chains long and 5 chains apart on stands 13 and 17 (Fig.--1). Contouring of some lines were required in order to remain within stand type.

The following data were recorded along each cruise line:

1. Diameter of each attacked lodgepole pine to the nearest 0.1 inch.

2. Classification of attacked trees based on infestation:

    a. Pitch out
    b. 1981 - infested
    c. 1982 - infested
    d. 1983 - infested
    e. Snag (date of infestation unknown)

SUMMARY

Throughout the Roaring Fork drainage, tree mortality caused by mountain pine beetle has increased from 1981 to 1983. Attack ratios from 1981 to 1982 indicate a static infestation trend; and, from 1982 to 1983 a slightly increasing trend (Table 3). However, populations throughout the area are still at low levels.

Stand 17LP9 shows the greatest increase in infestation intensity from 1981 to 1983 (a three-fold increase). This increasing trend is expected to continue in 1984. The remaining stands show a static to decreasing infestation trend. Beetle population levels are endemic in these stands and should remain endemic in 1984.

The alternatives and recommendations given in the enclosed biological evaluation (R2-81-4) are still valid. The potential for a large scale mountain pine beetle infestation in the Roaring Fork and North Fork drainages is moderate to high. Substantial mountain pine beetle caused tree mortality should occur within the next 3-5 years.

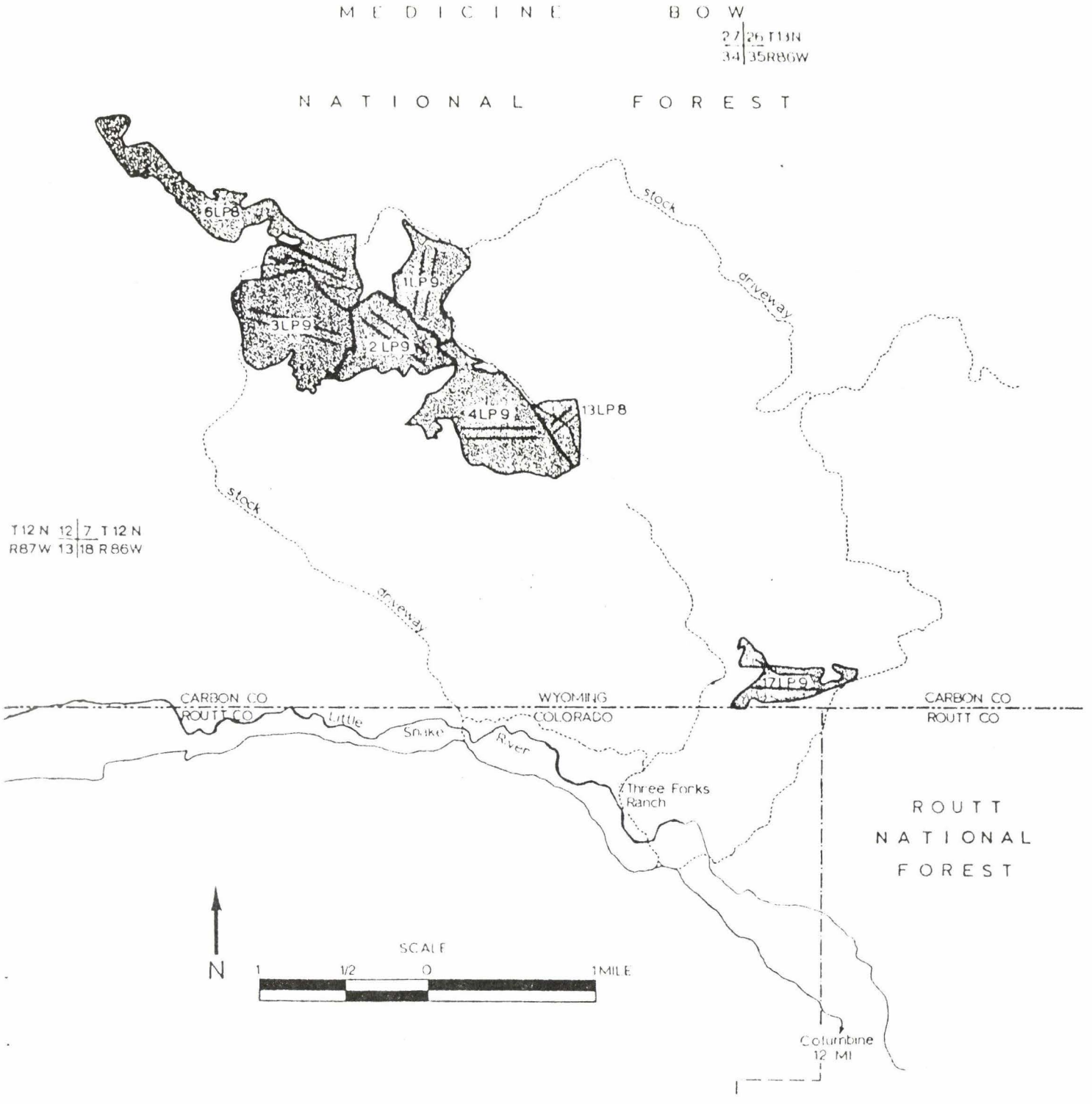

FIGURE 1-- Location of stands and cruise lines surveyed during September 19-23, 1983 for the Mountain Pine Beetle evaluation on the Medicine Bow National Forest.

TABLE 1 - Number of Trees Attacked in Each Stand

STAND	1983 INFESTED	1982 INFESTED	1981 INFESTED	SNAG	PITCH OUT	STAND RISK
1LP9	0	0	3	4	0	Low
2LP9	3	4	1	3	2	Mod
3LP9	0	0	2	2	0	Low
4LP9	3	1	10	7	1	High
6LP8	0	0	0	1	0	Mod
13LP8	0	0	0	0	0	High
17LP9	28	18	9	15	4	Mod
Total	34	23	25	32	7	
Attack Ratio	1983:1982 1.5:1		1982:1981 .9:1			

TABLE 2 - Mean Diameter of Attacked Trees in Each Stand

STAND	1983 INFESTED	1982 INFESTED	1981 INFESTED	SNAG	PITCH OUT
1LP9	0	0	17.6	14.8	0
2LP9	13.7	15.5	14.3	13.9	10.3
3LP9	0	0	16.6	19.9	0
4LP9	13.2	13.3	14.5	16.2	9.8
6LP8	0	0	0	17.0	0
13LP8	0	0	0	0	0
17LP9	15.0	14.3	13.1	13.7	13.5
Average DBH	14.0	14.4	15.2	15.9	11.2